

WHAT IS CLAIMED IS:

1. A signal transmitter comprising:

a battery;

a voltage boosting control signal generating means for sequentially generating a voltage boosting control signal through application of an output voltage of the battery as a power source voltage;

voltage boosting means including a switching means for generating a switching signal with a switching operation through input of the voltage boosting control signal to conduct a voltage boosting operation to boost the output voltage of the battery to a predetermined voltage based on the switching signal; and

transmitting means operated with the boosted voltage for transmitting data,

wherein a period of the voltage boosting control signal has a signal generation allowing period for allowing generation of the switching signal a signal generation inhibiting period following the signal generation allowing period to inhibit generation of the switching signal, the signal generation allowing period being increased as time passes to increase a number of generation of the switching signal,

wherein the switching means generates the switching signal during the signal generation allowing period of the voltage boosting control signal for every generation of the voltage boosting control signal and stops generation of the

switching signal during the signal generation inhibiting period, and

wherein the voltage boosting means boosts in steps the output voltage of the battery to the predetermined voltage for every generation of the switching signal.

2. A signal transmitter as in claim 1, wherein:

the voltage boosting means includes a voltage booster circuit having a voltage boosting characteristic specified with a relationship between a starting time of voltage boosting and the boosted voltage;

the number of the switching signal generated in the signal generation allowing period is so determined that the output voltage of battery is held above a lower limit value of an operating voltage range of the voltage boosting control signal generating means with the switching operation of the switching means;

wherein voltage boosting up to the predetermined voltage is attained depending on the voltage boosting characteristic so that, in the signal generation inhibiting period of the voltage boosting control signal, the output voltage of battery may be recovered from the output voltage dropping in the signal generation allowing period.

3. A signal transmitter as in claim 2, wherein:

the signal generation allowing period of the voltage boosting control signal includes the starting time of voltage

boosting when the voltage boosting control signal in the voltage boosting characteristic is generated; and

wherein the voltage booster circuit starts the switching operation of the switching means during the signal generation allowing period, when the starting time of voltage boosting has passed for every generation of the voltage boosting control signal from the control signal generating means.

4. A signal transmitter comprising:

a battery;

a voltage boosting control signal generating means for sequentially generating a voltage boosting control signal pulses through application of an output voltage of the battery as a power source voltage;

a voltage boosting means for executing a switching operation through input of the voltage boosting control signal and also executing the voltage boosting operation to boost the output voltage of the battery up to a predetermined voltage based on the switching operation; and

transmitting means operated with the boosted voltage for transmitting data as a radio signal,

wherein the voltage boosting control signal generating means sequentially generates the voltage boosting control signal to further increase the number of times of the switching operation of the voltage boosting means as time passes thereby to recover a drop of the output voltage of battery caused by the switching operation.

5. A method of operating a signal transmitter having a battery and a signal transmitter circuit operable with an output voltage of the battery, the method comprising the steps of:

generating a voltage boosting control signal having an ON-period and an OFF-period at a first fixed frequency, the ON-period being increased as time passes;

generating a switching pulse at a second fixed frequency higher than the first fixed frequency during the ON-period of the voltage boosting control signal so that the switching pulse is generated at least once in each ON-period of the switching pulse; and

boosting the output voltage of the battery in response to the switching pulse so that the transmitter circuit is operated with the boosted output voltage.

6. A method of operating a signal transmitter as in claim 5, wherein:

the ON-period is held uniform until the voltage boosting control signal is generated a predetermined number of times and being increased each time the voltage boosting control signal is generated another predetermined number of times following the predetermined number of times.